

REMARKS

Applicant's attorney thanks the Examiner for his comments. Independent Claims 1, 14 and 25 have been amended to recite that the desiccant component is selected from the group consisting of anhydrous salts, capillary desiccants, and combinations thereof. The amendment is supported on page 18, line 26 to page 19, line 3 of the specification. Dependent Claims 11 and 22 have been canceled. Dependent Claims 34 and 35 have been added.

The composition of the invention has the capabilities of a) binding to a substrate, b) absorbing water from the surrounding environment, and c) absorbing moisture from the surrounding atmosphere, due to the inclusion of the desiccant component. As explained on pages 18-19 of the specification, the desiccants described as "anhydrous salts" are those which absorb water or moisture to form a stable hydrated salt. Capillary desiccants are those which rely on fine capillaries between adjacent desiccant particles to absorb moisture. As further explained on page 8, lines 25-30, desiccants differ from other absorbent and superabsorbent materials in that desiccants absorb water via mechanisms that do not appreciably increase the volume of the desiccant.

a) Claim Rejections Based On 35 U.S.C. §102(b) Or §103(a)

The rejection of Claims 1-33 under U.S.C. §102(b) as anticipated by or, alternatively, under 35 U.S.C. §103(a) as obvious over U.S. Patent 5,853,867 (Harada et al.) is respectfully traversed.

Harada et al. does not disclose or suggest a desiccant component as required by Applicant's Claims 1, 14 and 25. The absorbent composition of Harada et al. includes a cationic polymer coated onto a substrate, and anionic polymer particles attached to the cationic polymer coating (Col. 7, lines 17-25). The anionic polymer particles are formed of absorbent polymers which are known to absorb water by swelling and expanding in volume (Col. 6, lines 15-26, Col. 7, lines 33-38, Col. 8, lines 13-22). These particles do not constitute a "desiccant" as described in Applicant's specification and claims.

Furthermore, Harada et al. discloses a cationic absorbent polymer prepared by polymerization of a monomer or monomer mixture in the presence of a polymerization initiator at a temperature of 0-200°C, preferably 50-150°C (Col. 4, line 54 – Col. 5, line 34). A crosslinking agent may be incorporated into the monomer or monomer mixture (Col. 5, lines 58-61). Polymerization and crosslinking therefore occur simultaneously.

Compared to Applicant's claims, Harada et al. discloses simultaneous polymerization and crosslinking, instead of crosslinking an already formed polymer.

Harada et al. provides several Examples. In one Example (Referential Example 7), an already-formed polymer is crosslinked. The crosslinking requires a specific crosslinking agent, and requires a temperature of 196°C, far greater than the maximum of about 120°C recited in Claims 1, 14 and 25. In another Example (Referential Example 6), a monomer solution is simultaneously polymerized and crosslinked using a crosslinking agent at a temperature of 150°C. The only Examples performed at less than 120°C simply form a polymer from a monomer, and do not crosslink the polymer (See Referential Examples 1-5). Harada et al. does not disclose a polymer which crosslinks at about 120°C or less, within about 10 minutes, as recited in Applicant's claims.

The rejections of Claims 1-33 under 35 U.S.C. §102(b) as anticipated by or, alternatively, under 35 U.S.C. §103(a) as obvious over U.S. Patent 3,951,893 (Gander) is respectfully traversed. Gander does not disclose or suggest a desiccant component as required by Applicant's Claims 1, 14 and 25. For instance, there is no mention of an anhydrous salt, or a capillary desiccant, in any of the compositions described in Gander.

Gander discloses a silane crosslinked polymer produced by solution polymerization of first and second polymers in the presence of a silane crosslinking agent. The solvent is an organic solvent (Col. 5, lines 37-52). The solution is stirred and swept with nitrogen, and the polymerization proceeds at temperatures of 75-90°C (Col. 5, lines 53-65). The crosslinking occurs during subsequent removal of the organic solvent (Col. 5, line 66 – Col. 6, line 10).

By the time the organic solvent is removed, the polymer is already formed and crosslinked. Thus, the resulting polymer (already crosslinked) is not water-soluble or capable of further crosslinking at about 120°C or less. Contrary to Applicant's claims, Gander does not start with an already-formed polymer that is capable of sufficient non-radiative crosslinking to reach the claimed absorbent capacity. Instead, Gander proceeds directly from a mixture of monomers, crosslinking agent and organic solvent, to form a crosslinked polymer.

Furthermore, Claims 1, 14 and 25 are directed to an absorbent binder composition or structure capable of binding to one or more substrate layers. What makes the composition effective as a binder is that a polymer solution is first applied to a

substrate, and then dried. Upon drying, the crosslinking effects binding of the composition to the substrate. A condensation reaction which effects crosslinking and binding is summarized on page 25, lines 6-14 of Applicant's specification.

The polymer formed by Gander does not have significant binding characteristics. The combination of polymer with organic solvent is spread on a coated paper substrate and is dried, resulting in a film which can be easily removed from the substrate (Col. 6, lines 6-10). The film has slight cohesive properties, but exhibits no significant binding to a substrate (Col. 6, lines 30-32).

For at least these reasons, Claims 1-33 are patentable over Harada et al. and Gander. Applicant requests withdrawal of the claim rejections based on 35 U.S.C. §102(b) and/or §103(a).

b) Claim Rejections Based On Double Patenting

The rejection of Claims 1-33 based on obviousness-type double patenting over Claims 1-28 of U.S. Patent 6,849,685 is respectfully traversed. The claims of the reference patent do not disclose or suggest a desiccant component as recited in Applicant's Claims 1, 14 and 25.

Furthermore, Applicant has enclosed a Terminal Disclaimer which renders the rejection moot. Applicant requests withdrawal of the claim rejections based on obviousness-type double patenting.

c) Conclusion

Applicant believes that the claims, as now presented, are in condition for allowance. If the Examiner detects any unresolved issues, then Applicant's attorney respectfully requests a telephone call from the Examiner, and a telephone interview.

Respectfully submitted,



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